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IDEAS FROM M-STEP. PROCEEDINGS OF A CONFERENCE HELD TO REVIEW AND EVALUATE TEACHER EDUCATION IDEAS BEING IMPLEMENTED THROUGH THE MULTI-STATE TEACHER EDUCATION PROJECT IN MARYLAND, MICHIGAN, SOUTH CAROLINA, UTAH, WASHINGTON, WEST VIRGINIA, AND FLORIDA (MARCH 27, 1967).

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This report is a collection of ideas presented and discussed at a conference in conjunction with a 7-state effort to strengthen contributions of state departments of education to teacher education at both pre- and inservice levels. The aim was to evaluate and review the Multi-State Teacher Education Project (M-STEP) in relation to the problems and needs of Florida. The report contains 2 essays on M-STEP in other states and 7 essays specifically concerned with the Florida M-STEP program, including the following topics: "Presentations by M-STEP Representatives From Other States," "Can the M-STEP Ideas Be Adapted to Florida's Needs?," "Using Information to Improve State Educational Leadership," "The Florida State Department of Education Information System," "Information on Teachers and on Schools Now Collected by the Division of Teacher Education, Certification, and Accreditation," "Using the Information We Have," "Analyses of the Florida Teacher Evaluation Data," "Reactions to Studies Using Data Collected With the Current Form," "The Measurement and Evaluation of Teaching: A Conceptualization of a Plan for Use in State Educational Leadership." (The conference program and a list of conference participants is appended.) (SG)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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IDEAS FROM M-STEP

PROCEEDINGS OF A CONFERENCE HELD TO REVIEW AND EVALUATE TEACHER EDUCATION IDEAS BEING IMPLEMENTED THROUGH THE MULTI-STATE TEACHER EDUCATION PROJECT IN MARYLAND, MICHIGAN, SOUTH CAROLINA, UTAH, WASHINGTON, WEST VIRGINIA, AND FLORIDA

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State of Florida
Department of Education
Floyd T. Christian, Superintendent
June, 1967

FOREWARD

This report was prepared to bring together a number of ideas which were presented and discussed at the "Ideas from M-STEP" conference held at Florida State University on March 27, 1967. A copy of the conference program is included as an appendix. "M-STEP" is the Multi-State Teacher Education Project, a seven-state effort to strengthen the contributions of state departments of education to teacher education. Consequently, ideas from M-STEP are ideas about teacher education at both the preservice and inservice levels.

The purposes of the meeting, more specifically, were (a) to provide an opportunity for reviewing and evaluating ideas which are being fostered by M-STEP in terms of their possible contributions to teacher education in Florida, and (b) to give persons from the other M-STEP states an opportunity to review and evaluate Florida M-STEP activities in terms of their own state problems and needs. Persons attending included (a) representatives from state departments of education in each of the M-STEP states, (b) representatives from Florida teacher education institutions and professional organizations concerned with teacher education, and (c) staff members from several divisions of the Florida State Department of Education.

The Multi-State Teacher Education Project is attempting to accomplish its objectives through innovative pilot projects being carried out in each of the seven participating states (Maryland, Michigan, South Carolina, Utah, Washington, West Virginia, and Florida). The M-STEP design was adopted to enhance cooperation between the states in planning, analyzing, and evaluating the pilot projects and also in disseminating information on activities and results. In Florida, pilot projects intended to help teacher education institutions and elementary and secondary schools to obtain information which they can use in improving preservice and inservice teacher education are now underway. These projects have taken two forms: (a) bringing people together in the State to exchange ideas, as was done through the conference, and (b) developing techniques for analyzing data collected by the State Department of Education to provide usable information. Some of these techniques were described at the conference.

The Multi-State Teacher Education Project is supported by funds granted under Section 505 of Title V of Public Law 89-10 (Elementary and Secondary Education Act of 1965).

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WELCOMING REMARKS

Floyd T. Christian, State Superintendent

It is with great pleasure that I welcome this group of distinguished educators to our "Ideas from M-STEP" conference. I hope that you will find this to be both a stimulating and an informative meeting.

As you know, ideas from M-STEP are ideas about ways to improve teacher education. And, as I am sure you realize, the improvement of teacher education is of great concern to my staff and to me.

Now when I say I'm concerned, I don't want you to interpret this as meaning I'm worried. I have the utmost confidence in the ability of Florida colleges and universities, of Florida professional organizations, and of Florida school systems to provide high quality preservice and inservice education for Florida teachers. When I say I'm concerned about teacher education, I mean that I realize its importance and that I wish for the State Department of Education to do its part in helping prepare better teachers.

Of course, the greatest concern of the State Superintendent is the education of the children, youth, and adults of Florida. This State has set out to provide every citizen with an opportunity for a quality education. And in so doing, we are quick to realize that quality education at any level has as its foundation quality teaching. We also realize that quality teaching is most likely to be done by persons who have been prepared in quality teacher education programs. Therefore, in our efforts to improve education in Florida, we are placing a great deal of importance on the improvement of teacher education. We feel that efforts in this area are likely to pay the greatest dividends.

The State Department of Education is anxious to help the colleges and universities, the elementary and secondary schools, and the organized profession to provide better programs of preservice and inservice teacher education. We have recently engaged Litton Industries of California to conduct a study of inservice education needs in Florida. A report of progress to date on this study will be presented at the meeting of the Teacher Education Advisory Council next week. We will take into consideration the findings of this study when making subsequent proposals relative to inservice education for teachers.

We are also working to strengthen the State Department of Education staff in the area of teacher education. The next professional

position to be added in the State Department of Education will be that of teacher education consultant. We will employ for this position an individual with broad experience in teacher education. Through his leadership and with the help of the Teacher Education Advisory Council, we hope to revise the standards and procedures for state approval of teacher education programs. We also hope to establish more effective communication and collaboration between teacher preparation institutions, elementary and secondary schools, professional organizations, and the State Department of Education.

From these remarks, you can see that State Department of Education efforts to improve teacher education in Florida are moving in two directions. First, we are trying to obtain information which will enable us to make decisions on a more rational basis. In colleges and universities this is done through institutional research. The State Department of Education is also carrying out institutional research. This is exemplified by the study of inservice education. The second way we are working to improve teacher education is by promoting greater communication, cooperation, and collaboration between colleges and universities, professional organizations, elementary and secondary schools, and the State Department of Education.

Participation in M-STEP has enabled us to move more quickly in both of these directions than we might otherwise have done. Through M-STEP we have developed an information retrieval system which enables us to obtain from our current files a great deal of information which was not previously accessible. Fred Daniel and Wil Robinson tell me that if there is information in those files which I need, they can have it for me in the morning. Through M-STEP we have also conducted extensive analyses of teacher evaluation data. These will be discussed this afternoon.

M-STEP has also served to stimulate greater collaboration between the Florida State Department of Education and other agencies concerned with teacher education. Representatives of the Association for Student Teaching worked with Teacher Education Advisory Council members and State Department of Education staff members in the development of the booklet, Guidelines for Student Teaching in Florida, an M-STEP sponsored publication. Assistance to colleges and to graduate students who may wish to make us of State Department of Education data files has been made available through M-STEP. On Tuesday, Wednesday, Thursday and Friday of this week, regional conferences dealing with school-college cooperation in professional laboratory experience will be held in four Florida cities. These are being sponsored by the State Department of Education and the Association for Student Teaching.

However, as Dr. Bosley will probably point out, M-STEP is not intended simply to promote activities within states. It is also designed to stimulate the interchange of ideas between states. During this past year, members of my staff have had the opportunity to visit several of the M-STEP states and to discuss with them their teacher education activities. We are pleased

today to have the opportunity to exchange ideas with representatives of each of the other states in the Project. I hope that finding out first-hand what is being done in these states will provide us with new insights which will result eventually in improved teacher education in Florida.

Let me conclude by reiterating my welcome: to college representatives, to representatives of professional organizations, to State Department of Education staff members, and especially to our out-of-state guests. We are pleased to have you here.

PART ONE

M-STEP IN OTHER STATES

PRESENTATIONS BY M-STEP REPRESENTATIVES FROM OTHER STATES

The persons participating in this conference were asked to provide a statement outlining the M-STEP idea or ideas which they would describe. This statement was to point out the type of problem toward which particular M-STEP activities are directed, the general approach which is being taken, and the general rationale for adopting such an approach. Those statements are reproduced below.

"The M-STEP Idea"

M-STEP is a compact of seven states, formed for the purpose of finding ways to improve teacher education.

M-STEP's prime goal concentrates on the improvement of laboratory experiences in teacher education. Though M-STEP advocates no particular design, this concept could involve several stages and types of clinical processes, among them being:

1. Student teaching, standard model

2. Student teaching, deluxe version

3. The clinical experience concept: a broader approach to a genuine laboratory situation.

   a. undergraduate internships

   b. graduate and inservice internships

4. An intensified clinical core program in which professional laboratory experiences cease to function as an adjunct to teacher preparation, and become a major function. This level is characterized by:

   a. A clear-cut and thoroughly defined set of teaching skills, techniques, understandings and items of professionally oriented awareness which comprise the components of effective professional performance.

   b. These components of effective professional performance should be organized into a system of priorities and sequence, and their opportunities for acquisition extended over a larger period of time than is now devoted to laboratory experiences.

c. The professional learning processes of a direct nature are appropriately balanced with reorganized course work, seminars and discussion groups. Both avenues of professional development are supplemental and reinforced with latest visual media and processes.

d. The student's progress through the professional sequences of the four-year college program would be dependent upon, and guaged by his success in the acquisition of the teaching component series rather than by his accumulation of semester hour credits.

5. A clinical experience center, operating as an autonomous entity, but guided by some type of control system. Presumably such a unit would serve a public school system of a state or region, and would also provide professional laboratory services to one or more colleges and universities.

A second major tract in the M-STEP is the exploration of effective means for utilizing video tapes and video processes in teacher education.

The third major track involves the organization of intra-state cooperative effort between professional agencies and organizations within the state.

A fourth item of M-STEP concern is the creation of operational prototypes for interstate cooperation in teacher education. This is one of the original thoughts of M-STEP, as were the other three, because somehow in American education state boundaries have tended to impede the transfer of ideas.

Howard E. Bosley, Director, M-STEP

"Videotapes for Teacher Education"

M-STEP planning and programming is proceeding along two major avenues both of which are related to the original objective of strengthening and improving the preservice education of teachers especially in the area of student teaching or laboratory experiences.

One major effort is being directed toward the publication of a Handbook on Student Teaching. This is considered to be a highly desirable project and one that complements the other major effort in M-STEP at this time. Regular meetings are being held by college and State Department personnel to compile data and resolve any problems which might arise in the process of developing an effective publication. The proposed handbook is undergoing continuous revision and a final draft is expected to be adopted for printing and preliminary testing and use beginning July 1 of this year. The publication is expected to result in a strengthening of the leadership role of the State Department with the twenty-two colleges in the State and

in bringing about improvement in planning for and carrying out better student teaching programs in the various colleges concerned.

The second major effort is being directed toward the production of several video tapes which deal with various phases of the student teaching process. These tapes, together with the handbook would constitute a major breakthrough in making available to those involved in student teaching both printed and visual materials. The aim of such materials is to help such persons and institutions transmit not only the fundamental theories and principles of good student teaching programs but to provide audio-visual tapes which effectively demonstrate that such principles actually work. It is hoped that both theory and practice are being wedded in these tapes.

Completed or in process at this time are tapes on lesson planning (1), unit planning (1), debate (1), the use of media teaching (1), methods and motivation in the classroom (3), laboratory teaching (1), and the roles of the various persons involved in student teaching (1). All of the above have as their goal the employment of methods which can be used with future persons as teaching materials to improve the quality of student teaching programs.

Boyd Israel, South Carolina

Utah is focusing on the use of instructional media to improve laboratory experiences for pre-service and in-service teachers. An attempt is being made to improve teacher education through more extensive use of videotaped observations (recorded classroom episodes) and micro-teaching. Following a planning conference held at Park City last summer, guidelines were developed and pilot projects outlined to emphasize new uses for instructional media. A series of 13 recorded classroom episodes were produced, and these will be distributed and evaluated in an effort to determine the extent to which they can supplement, extend, and reinforce laboratory experiences.

Concurrently, two project activities have been undertaken which involve experimentation with micro-teaching as a technique in teacher education and one activity concerned with "The Dynamics of Team Teaching." The micro-teaching project being conducted in cooperation with the University of Utah is directed toward the identification of certain teaching behaviors utilizing videotaped peer-teaching sequences and the production, evaluation, and coding of the peer-teaching episodes. In conjunction with Brigham Young University, an attempt is being made to (1) identify criteria for model videotapes for use in micro-teaching which will demonstrate strategies for effective teaching behavior; (2) screen presently available videotapes and films on micro-teaching for inclusion in a bank of model tapes and films; (3) prepare model tapes for demonstration of micro-teaching techniques when they are not available; and (4) prepare videotapes of model teaching behavior to be used in micro-teaching sessions. The team teaching activity involves production of a series of two or three videotapes in cooperation with Weber State College and the Weber County Exemplary Team Teaching Center.

Vere A. McHenry, Utah

"Centers for Student Teaching"

In Michigan there appears to be an established need for agreement among the teacher education institutions and the sponsoring school districts as to the nature and extent of the student teaching experience.

Conditions in different geographical areas of the State vary widely with respect to the nature and number of population, resources, number of teacher education institutions and other factors. For this reason, we have decided to divide the state into a proposed half dozen regions for better administration of student teaching programs. In each region, problem areas will be identified and discussed, committees will be appointed to study such areas as, selection and training of the local school and college supervising teacher, contractual agreements among the institutions and the local schools, policies on placement of student teachers, financial assistance to the local school supervising teacher and other problems that might be identified through the regional approach.

Michigan feels that through the democratic cooperation of colleges, universities, local schools, professional organizations, and the State Department of Education that student teaching programs can be improved. Emphasis on experimental programs in student teaching will be stressed in each of the six proposed regions.

In order to coordinate the activities of the various regions and implement the overall project in Michigan, a Reaction Panel composed of representatives from the colleges and local schools in the six regional areas has been appointed. This group will meet regularly with Michigan M-STEP personnel in carrying out objectives of the project and also will be responsible for suggesting new ideas and designs for professional laboratory experiences in student teaching.

As part of the M-STEP activities in 1967, Michigan will host a three day Clinic on Student Teaching, May 31, June 1 & 2, 1967. Each M-STEP Director and Coordinator will be invited to Michigan to participate in a conference with representatives from each of the 25 teacher education institutions in the State. This clinic will provide the opportunity to exchange ideas and react mutually to the various state programs in student teaching and teacher education.

Jerry E. Chapman, Michigan

Underlying the West Virginia M-STEP program is the belief that the cooperative efforts of public schools, the State Department of Education, teacher education institutions with diverse student populations, programs and purposes, will produce improved student teaching experiences.

Based on this thinking, M-STEP in West Virginia has taken the form of a Pilot Center for Student Teaching located in the public schools of Kanawha County. The cooperating institutions include Marshall University, a state university at Huntington; West Virginia State College, formerly

non-white, at Institute; West Virginia Institute of Technology, a technical school with a secondary teacher preparation program, at Montgomery; Concord College, a multi-purpose college at Athens; and Morris Harvey, an independent college located in Charleston.

The Center, which in its initial session enrolls approximately thirty (30) students from the five colleges, is designed to operate under a staff of professionally trained personnel holding positions on the public school staff. Direction is being given to this staff by an Advisory Committee composed of representatives from the cooperating teacher training institutions, the public schools and the State Department of Education.

The cooperating agencies channel their resources through the Center to the participants through seminars for student teachers and an intensive inservice program for supervising teachers.

It is believed that both a climate for the improvement of student teaching, and the organizational pattern for implementing such improvement, will result from the Center approach being carried out in West Virginia.

John B. Himelrick, West Virginia

Maryland M-STEP is developing a center for laboratory experiences in teacher education. Project activities are focused in Kemp Mill Elementary School, Silver Spring, Maryland. Policies for the operation of the center are determined by an M-STEP Steering Committee, and cooperatively administered by representatives of the Montgomery County Public Schools, the University of Maryland, and the Maryland State Department of Education.

The general objectives for the Project are:

1. To demonstrate that preservice education and inservice staff development can be unified in a continuing teacher education program when there is increased responsibility for preservice education by the school system and for inservice education by the college in a teacher education center.

2. To identify and study new roles and skills for public school and college faculties in a continuing teacher education program.

3. To identify and study the role of a teacher education center coordinator jointly appointed and employed by the school system and college.

4. To identify and study the role of a state department of education in a continuing teacher education program.

Experiences for student teachers will be planned cooperatively by representatives of the Maryland State Department of Education, the Montgomery County Public Schools and the University of Maryland. The University Center

Coordinator will work directly with the students and cooperating teachers to utilize the strengths of all faculty members so that a wider variety of experiences than has previously been possible can be provided.

Arthur P. Kulick, Maryland

"Coordinating Preservice and Inservice Teacher Education Programs"

1. The concept of teacher education needs to be extended. The preparation of the teacher begins early in his collegiate career and extends into the first several years of teaching. The education of the teacher really never ends.

2. The responsibility for teacher preparation is shared. Primary responsibility for preparation gradually shifts from the teacher preparing college, to the public school system, to the professional association, to the individual himself.

3. The concept of what teaching is about is changing. The differences between public speaking and teaching are becoming clearer. New media provide the possibility for individualization of instruction. Methods emphasizing pupil initiative and pupil responsibility for learning seem to be most promising.

4. More of the practical phases of teacher preparation will be done in public schools involving district personnel and college people.

5. Teacher preparation would be greatly improved if preservice and inservice programs were articulated, and if the resources of both the college and the district were used.

6. Teacher preparation should be designed for excellence.

William H. Drummond, Washington

"CAN THE M-STEP IDEAS BE ADAPTED TO FLORIDA'S NEEDS?"

Following the presentations by M-STEP representatives from out of state, conference participants were divided into discussion groups to consider the question, "Can the M-STEP ideas be adapted to Florida's needs?" As is often the case, more questions were asked than were answered. The statements below were taken from recorders' reports (and edited). These statements are included to provide an indication of group interests and reactions. (The names of the members of any particular group can be obtained from the complete list of participants included in the Appendix. The number in parentheses after each name indicates the group in which he participated.)

Group One

Chairman: Roy E. Dwyer Recorder: John Waters

This group posed two questions:

1. Should the preservice instruction be "cleared up" before student teaching and inservice instruction are tackled on a broad scale?

2. Should there be a state coordinating council to consider the problems in student teaching programs? Of inservice education?

Group Two

Chairman: William Maloy Recorder: M. Mitchell Ferguson

Group two discussed the importance of developing cooperation between local schools, teacher education institutions, and the State Department of Education in improving preservice and inservice teacher education. One agency cannot solve all problems alone.

The discussion also dealt with the importance of classifying types of teaching performance and developing techniques for appraising them. A third area of discussion was the potential use of video tapes in local schools.

Group Three

Chairman: Evelyn Sharpe Recorder: William E. George

Group three felt Florida could profit from accepting parts of the M-STEP ideas or suggestions made by the other states. They did not want

the total idea accepted and implemented. A large portion of the discussion centered around the internship program and how these ideas could be used to assist Florida in receiving better trained interns in greater numbers. The role and responsibility of the university, State Department of Education, county staff, and professional organizations for internship program and in-service education was also discussed. The 5-year teacher education program was discussed, along with ideas on certification in general. Simplicity and flexibility in teacher certification, as discussed by Dr. Drummond, was explored relative to Florida needs. The principle, in theory, sounded good; however, the group felt a much closer examination was needed before the idea was implemented.

Group Four

Chairman: Bert Sharp Recorder: John Ritter

The discussions of this group centered around four questions. The questions were,

1. Are any M-STEP projects aimed at identifying good instructional practices? If so, what criteria are being used?

2. What do the people in the Washington project mean by broad field of training? Do the concepts of hours vs. credits appear anywhere in the plan? What kinds of specializations are included in the training of elementary teachers?

3. In more specific detail what are the arrangements between local systems and the University in the Maryland plan for a training center?

4. What kind of cooperative arrangements are being made by the institutions in Michigan?

Group Five

Chairman: Sister Ann Thomas Recorder: W. W. Wharton

In the group discussion it was the consensus that in the total program of teacher training the local school districts must assume a greater responsibility. How local districts can prepare for this responsibility and where the leadership will come from appeared to be major problems to be resolved, along with how to finance the local district effort.

The group felt that responsibility for the supervision of interns should remain with the colleges. However, the role of the colleges and the local school districts should be re-examined and perhaps redefined. The accomplishment of the goals of teacher education, may require the additional leadership and direction of a third agency. It was suggested that the State Department of Education was a logical and desirable source of leadership along with the colleges and local districts in planning and directing a program of teacher training. The point of a cooperative

effort made by the colleges, local school districts and State Department of Education was emphasized.

It was pointed out that because Florida must recruit a large number of teachers from outside the State, the development of any program must provide for inservice training as well as preservice training.

PART TWO

THE FLORIDA M-STEP PROGRAM

USING INFORMATION TO IMPROVE STATE EDUCATIONAL LEADERSHIP

Wm. Cecil Golden, Assistant Superintendent
Teacher Education, Certification and Accreditation

We asked for the privilege of being a part of M-STEP because of its major purpose: to strengthen the capacity of state departments of education for providing leadership in the development of joint responsibility among local education agencies and teacher education institutions in the preparation of professional personnel.

The traditionally accepted roll of state departments of education in teacher education can be divided three areas: (1) to approve institutional programs of teacher education, (2) to issue certificates to instructional and administrative personnel, and (3) to accredit schools.

Historically, state departments of education have devoted more time to the administering of these functions than they have to appraising their effectiveness and working toward the improvement of teacher education. M-STEP is attempting to place renewed emphasis on the latter. A major purpose of the Project is to promote "joint responsibility among local education agencies and teacher education institutions for the preparation of professional personnel." And it is with the help of state departments of education that this is to come about.

Is this a desirable function of a state department of education? Is this a logical function of a state department of education? We think the answer to both questions is, yes.

The next question--Why haven't most state departments of education directed more of their energies and resources toward achieving this purpose. There are of course many reasons. In Florida we have decided to explore one factor which in our opinion offers good possibilities for the State Department of Education to exercise a greater leadership function in teacher education.

In the process of administering the education affairs of a state, the State Department of Education either collects or can collect data of almost unlimited amounts on many phases of education. One of the primary objectives of our project is to develop techniques or systems which could be employed by state departments of education which will ensure the collection of appropriate types of data in usable form about teaching and teachers in the state. Then through effectively organized procedures, we hope to show ways of feeding back this information to those who administer

and carry out educational services within the State. The following are some tasks we are now working on with these goals in mind:

1. We are analyzing procedures for appraising teacher performance.

2. We are analyzing results of teacher examinations to determine strengths and weaknesses in the preparation of teachers inservice.

3. We are analyzing teacher assignment practices.

4. We are promoting school-college cooperation in providing laboratory experience in ceacher education.

5. We are studying the migration patterns of teachers. We will combine with this anticipated curriculum change and develop a detailed projection of teacher needs for the next 10 years.

With appropriate data on all phases of education being continuously fed back to the proper organization and agencies, we anticipate continuous modification and change in service provided.

The rationale underlying our present approach goes something like this: Educational leadership is a process intended to promote changes which will facilitate the attainment of educational objectives. It is feedback that calls attention to changes which need to be made. If those who exercise control over our educational services receive no information relative to the effectiveness of their operation, it is probable that no change will be initiated. (No leadership will take place).

We believe that for a state department of education to exercise leadership it must develop "organizational inertia." The State Department of Education must see that there is "mutual interaction" among the people, organizations, and agencies which are to provide services which will improve teaching. A basic role of the State Department of Education should be to identify types of changes needed and to facilitate feed back to evaluate the changes when they are put into practice.

We are very encouraged about the possibilities of M-STEP and we are confident that the role of the State Department of Education as it relates to teacher education is definitely moving in the direction of the major goal of M-STEP.

THE FLORIDA STATE DEPARTMENT OF EDUCATION INFORMATION SYSTEM

by L. Everett Yarbrough
Director, Systems

In the State Department of Education we believe that accuracy and relevance are the qualities which make information significant and useful. Regardless of their internal speeds or technical efficiency, computers and other types of data processing equipment cannot be effectively utilized by an organization unless such equipment is appropriately integrated with other elements of the information system of the organization. Hence, we are now developing a comprehensive information system designed to utilize information from a wide range of sources and to generate information which is relevant to a wide range of problems.

Department organization for systems development and implementation is shown in this Figure 1. The solid lines on this chart represent the administrative channels of the state department in relationship to the information system. The chief administrator of the information system is the deputy superintendent who also has general administrative responsibility for other department-wide services. Both the Data Processing Operations Section and the Systems section are responsible directly to the deputy superintendent. Administration of the information system at this level has been a significant contributing factor to the ability of the department to make decisions necessary to reasonable progress in moving from an uncoordinated information system toward the ideal of a coordinated system.

Although administrative responsibility for the information system flows through the channels represented by unbroken lines on this chart, there are many relationships of the information system personnel represented by broken lines on the chart. These relationships are best described as coordinative - consultative. Note that relationships are indicated between information system personnel and those of each division of the department and local school personnel. Note also the relationship between the Department Data Systems Steering Committee and the organization for administration shown here.

A coordinated information system (Figure 2) is characterized by interrelated procedures making optimum use of electronic and mechanical equipment. Input documents are designed to (1) minimize duplication of items, (2) provide data as a by-product of an on-going activity at the source, (3) utilize standard item definitions drawn from catalogues of items developed from theoretical consideration of needs and evaluation of needs that become apparent in practical implementation. The data are processed through interrelated procedures which are in fact one overall set of procedures

Figure 1

DEPARTMENT ORGANIZATION FOR SYSTEMS
DEVELOPMENT AND IMPLEMENTATION

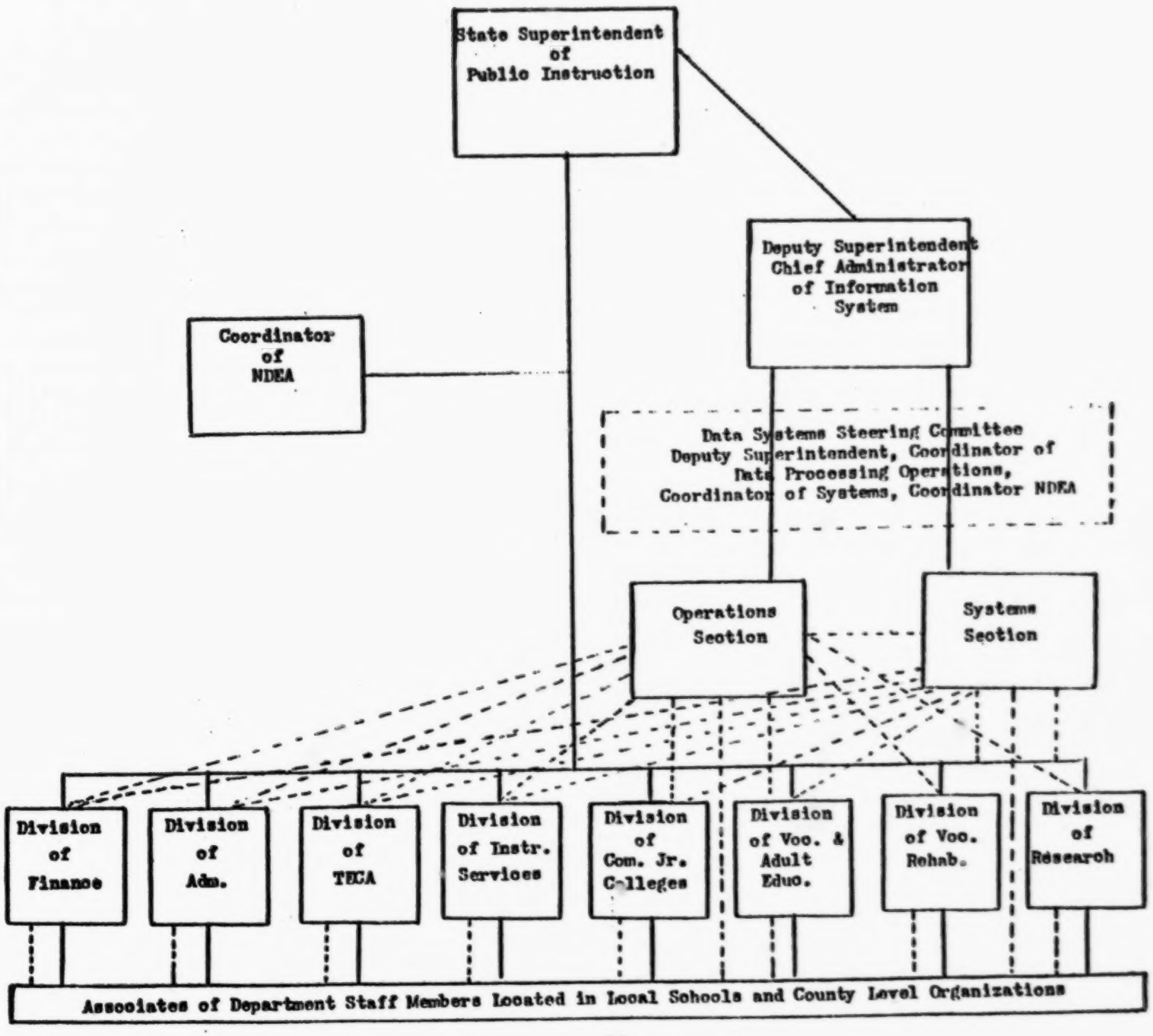
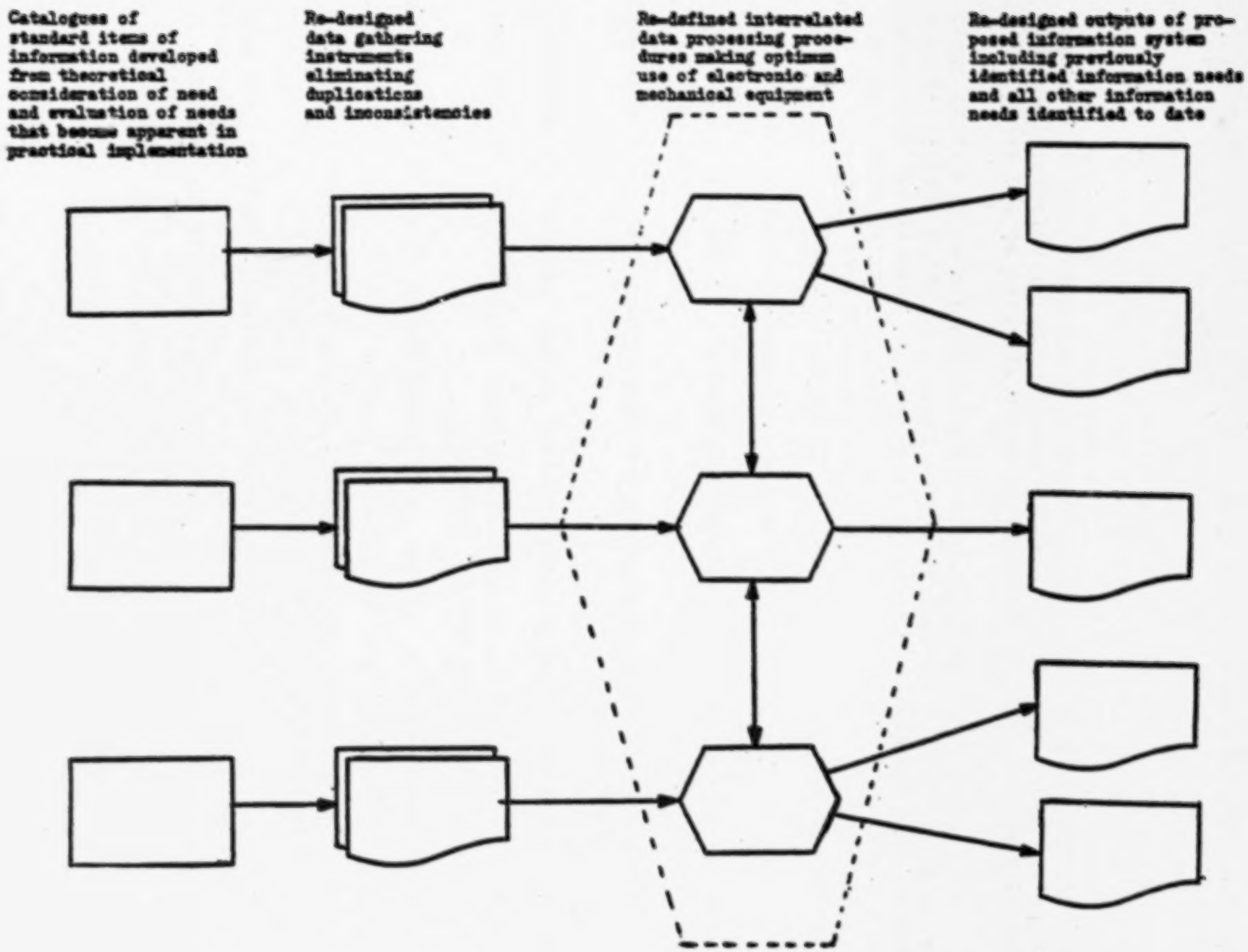

State Superintendent of Public Instruction
Deputy Superintendent Chief Administrator of Information System
Coordinator of NDEA
Data Systems Steering Committee
Deputy Superintendent, Coordinator of Data Processing Operations, Coordinator of Systems, Coordinator NDEA
Operations Section
Systems Section
Division of Finance
Division of Adm.
Division of TECA
Division of Instr. Services
Division of Com. Jr. Colleges
Division of Voc. & Adult Educ.
Division of Voc. Rehab.
Division of Research
Associates of Department Staff Members Located in Local Schools and County Level Organizations

Figure 2

A COORDINATED INFORMATION SYSTEM


Catalogues of standard items of information developed from theoretical consideration of need and evaluation of needs that become apparent in practical implementation
Re-designed data gathering instruments eliminating duplications and inconsistencies
Re-defined interrelated data processing procedures making optimum use of electronic and mechanical equipment
Re-designed outputs of proposed information system including previously identified information needs and all other information needs identified to date

allowing for output documents to contain information entering the system through any of the input sources. A continuously updated cumulative record of all items of data is maintained. These items are organized around logical poles such as a pupil, a teacher, a facility, etc., with the identification number of the pole serving as the major control for the record.

Integration of the system segments primarily concerned with the functions of payroll reporting, state aid distribution, teacher certification and school accreditation is indicated in Figure 3. It may also be seen that other segments are related to these segments at several points. In fact, this figure represents only four of more than 50 major segments of the educational information system segments under the immediate direction of the State Department of Education. Since the Florida Educational Information system is a statewide system, however, there are many segments operated by county units or universities which interact on a coordinated basis with those directed at the state level.

Continued development and implementation of practical applications is depicted in Figure 4. The directions which this would take would be determined by obvious needs as well as theoretical considerations. Data committees may be expected to move the information system of an organization from a typical traditional uncoordinated status to an adequate coordinated status in steps similar to the following:

1. Initial desired output document contents are identified.

2. A determination is made of the contents of the data bank needed to produce the desired output.

3. Data gathering instruments are developed to provide source data required.

4. The contents of a second desired output document are defined.

5. A determination is made of the data required to be in the data bank to produce the desired output.

6. A determination is made as to those needed items already in the data bank.

7. Data gathering instruments are developed to provide additional items required.

8. Additional output requirements are defined, required data bank contents determined, new data to be gathered are provided until that happy day when for each new output requirement defined adequate data are available in the data bank and additional data gathering instruments and procedures are not required.

Figure 3

INTEGRATED SYSTEM SEGMENTS

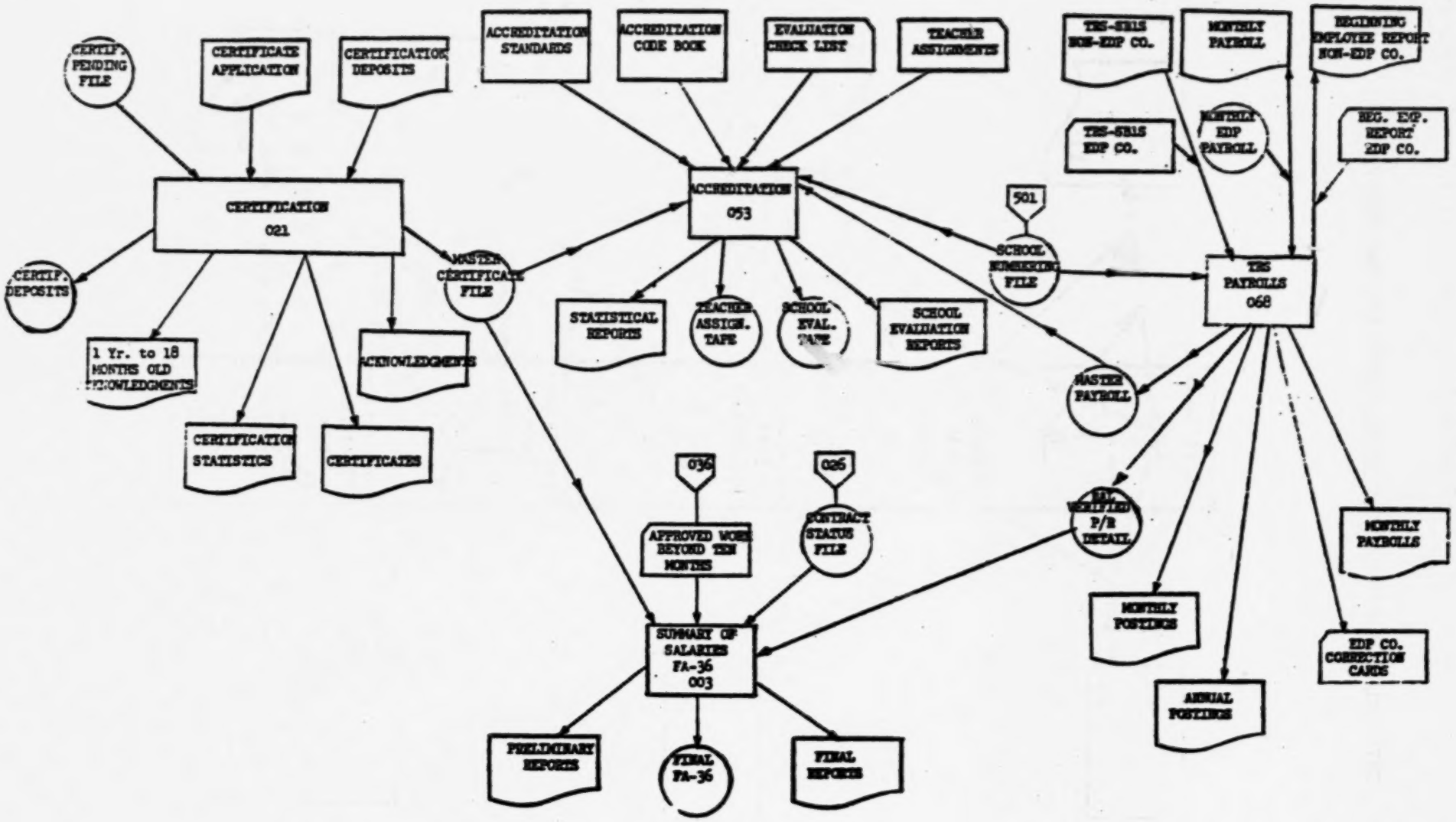
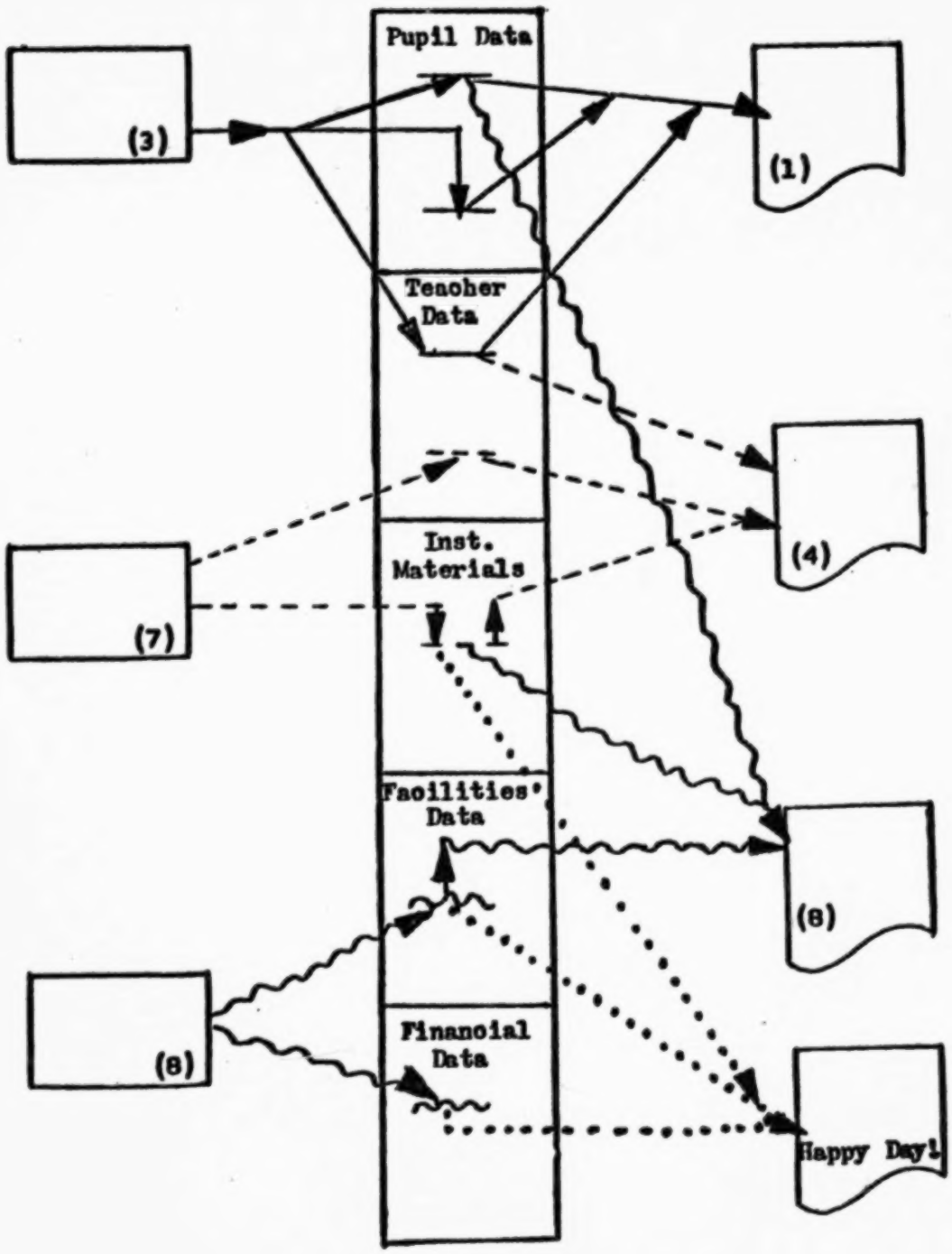


Figure 4

INTERRELATED APPLICATION DEVELOPMENT AND IMPLEMENTATION



INFORMATION ON TEACHERS AND ON SCHOOLS NOW COLLECTED BY THE DIVISION OF TEACHER EDUCATION, CERTIFICATION AND ACCREDITATION

From the beginning of M-STEP, the large body of data which have been routinely collected by the Florida State Department of Education has been considered a significant resource. This information is particularly valuable because much of it is stored on magnetic tape and is available for selective retrieval via computer. Florida M-STEP has placed particular emphasis upon developing methods for using information collected by the Division of Teacher Education, Certification and Accreditation. The type of information in the tape files is described below.

In files which contain teacher records, the teachers are identified by a State Department of Education identification number assigned either by the Certification Section or the Teacher Retirement Service. In files which contain school records, the schools are identified by a county identification number and also a school number which is assigned by the School Plant Section.

Master Certificate File

Information on the master certificate file is collected by the Certification Section. This file contains a record for each teaching certificate which has been issued. Each record contains certain biographic or status information on the certificate holder, as well as information about the certificate. The following is information on certificate holders contained on the file which may be relevant in certain types of studies:

- Name
- Birthdate
- State of birth
- Sex
- Marital status
- Institution of graduation
- Year of graduation
- Degree

The following information about the certificate is also included:

- Certificate type (There are twenty-two different types of certificates which are issued or have been issued.)
- Academic rank (The rank represents the level of the academic degree on which the certificate is based.)
- Year of issue
- Expiration date

Minimum Foundation Program salary rank (This determines the level of state support under the Minimum Foundation Program to which the county employing this certificate holder is entitled for his services.)
Endorsements (These indicate the specific subjects or fields to which this certificate holder is eligible to be assigned.)

Teacher Examination Scores

Candidates requesting teaching certificates since 1961, have been required to file with the State Department of Education a score on either the National Teachers Examination or the Graduate Record Examination. The complete file of these scores is on magnetic tape and available for analysis.

In addition, Educational Testing Service provides the Department with records of scores earned by all persons taking the National Teachers Examination in Florida centers. These scores are also available in a separate file. However, the individuals who took the tests are not identified on the file. The only identification information refers to the individual test centers.

Teacher Evaluation Records

Since 1961, it has been required by statute that each teacher be evaluated annually and that this evaluation be placed on file in the State Department of Education. The evaluation records from 1963-1966 are stored on tape. However, these records are available only to State Department of Education personnel and authorized county personnel. It should be noted also, that interpretations which can be made from these evaluations are limited. This matter is discussed in a subsequent section of this report.

School Information

In administering the school accreditation program, the Accreditation Section collects considerable information on public schools (grades K-12). The following information has been compiled from accreditation reports for the school years 1961-67 and is stored on tape. The file contains one record for each school.

School name
Grade organization
Type of school
New school
Operation less than 3 years
Double sessions
Number of instructional staff members

Number of library clerks
Number of guidance clerks
Number of secretaries (other than library and guidance)
Number of teacher aides
Number of custodians and maids
Number of library books
Number of library books per child
Membership, K-6
Net length shortest day, K-6
Net length longest day, K-6
Method of instruction, elementary
Number of elementary departmentalized periods
Membership, 7-9
Membership, 10-12
Total membership, K-12
Net length of shortest day, 7-12
Maximum net minutes per period, grades 7-9
Maximum net minutes per period, grades 10-12
Maximum net minutes per period, grades 7-12
Number of instructional periods per day, secondary
Number of acres in site

Teacher Assignment Information

Information on teaching assignments for the school years 1964-1967, has also been collected by the Accreditation Section. The assignment file contains a record for each teacher in each school. The record contains the following information:

Special permits which have been granted (for a teacher with an assignment not covered by his certificate but who has earned at least six semester hours of credit toward infield certification.)
Full-time or Part-time teacher
Assignment of teacher by course and period (This indicates the specific subject(s) and level(s) taught by each teacher or the type and level of assignment held by an administrator.)
Infield certification (i.e., is the teacher or administrator properly certified for his assignment)
Memberships (i.e., number of pupils) by period assignment
Number of planning periods assigned to the teacher
Number of supervisory periods assigned to the teacher
Predominant type of instruction for each assignment (types include regular instruction, core or block time for basic education classes, language laboratory or science laboratory, large lecture, programmed learning, team teaching, large class television, and service personnel.)

Analysis Which Have Been Conducted by the Accreditation Section

In the Accreditation Section, the following types of information are available for the years 1963-64, 1964-65, and 1965-66:

Item analysis of standards for school, county, and state, showing percentage of compliance with standards.

Total courses, classes, students, and teachers by school, county, and state-

a. Total classes taught (by courses) and size of classes
b. Total students enrolled in classes (by courses)
c. Total teachers by course assignment and (in-field and out-of-field) certification

Total of high school graduates by school, county, and state, entering colleges, universities, technical, trade, and other schools in and out of the state.

Analysis of selected items comparing statistical information to personnel information.

Staff assignment analysis of "out-of-field" personnel, showing teaching certification and teaching assignment by period.

Number of each type of audio-visual equipment, tapes, records, and films housed in the school.

USING THE INFORMATION WE HAVE

K. Fred Daniel and Wil C. Robinson

A major goal of Florida M-STEP is to make immediate use of information now on file on the State Department of Education--particularly that collected by the Division of Teacher Education, Certification and Accreditation. It is felt that within this bank of data is information which is relevant to numerous current programs and problems.

For example, teacher examination scores might be analyzed to determine areas of strength and weakness in the academic preparation of various segments of the teaching population. Teacher assignment files might be analyzed to determine the teaching locations and assignments for graduates of various institutions. The institutions might then use this information to follow up their graduates to obtain additional information for evaluating their programs. Teacher examination files could also be analyzed to study teacher employment and migration patterns or to obtain information on which to base projections of future teacher needs.

In addition, the files could be used to select samples for researchers interested only in a given segment of the teaching population. Examples might be teachers of a given subject, teachers who graduated from a certain institution, teachers with certain types of degrees or certificates, or teachers teaching in a certain type of school.

Almost all of the information collected in the Division of Teacher Education, Certification and Accreditation which is of potential value for purposes such as those described above is presently in a form which makes it accessible by computer. There are also data collected by other Divisions which could be combined with this information to make it even more useful.

There has been a problem, however, in using such information. When the many data files in the Department were built, retrieval programs were not developed which would make the information immediately available for purposes such as those described above. It was not--nor is it now--feasible to write individual retrieval programs for the multitude of potential problems to which certain portions of these data may be relevant. Thus, it has been necessary to design a new approach.

A Flexible System for Data Retrieval and Analysis

The approach adopted consists of a system (i.e., a series of integrated programs) designed to select, combine, edit, analyze, and print

an almost infinite number of different combinations of information from almost any collection of data files. With this system it normally would take an hour or less to prepare all of the necessary instructions to run the data retrieval and analyses for a given problem using the State Department of Education computers. In certain cases the instructions could be prepared in a few minutes; in others the time required might be several hours. In all cases, however, the necessary preparation time is a minute fraction of that which would be required to write a special program for the job.

The flexible system for data retrieval and analysis is depicted in Figure 5. The system is still being developed. However, there are now in use in the Department programs which perform each of the functions included in the system. Thus, it is presently possible to perform most of the retrieval and analysis operations which might be desired. In using the present programs with certain jobs it is necessary to perform time consuming additional operations in order to obtain the desired results. Hence, while the system in its present from makes it possible to obtain much information which was not immediately available in the past, for some jobs it is extremely inefficient. This limits the application on which the system can be used.

The flexible retrieval and analysis system makes use of two computers: an IBM 1401 and an RCA 301. While it is not necessary to have two computers to perform the functions of this system, the availability of programs which make up the system and the availability of data processing facilities in the State Department of Education made this desirable in the present situation. Most of the data files compiled by the Division of Teacher Education, Certification and Accreditation are built using the 1401 computer. Therefore, the programs for selecting and combining information are written for the 1401. However, most general analysis programs available in the Department are written for the 301. Therefore, the analysis phases of the system use the 301.

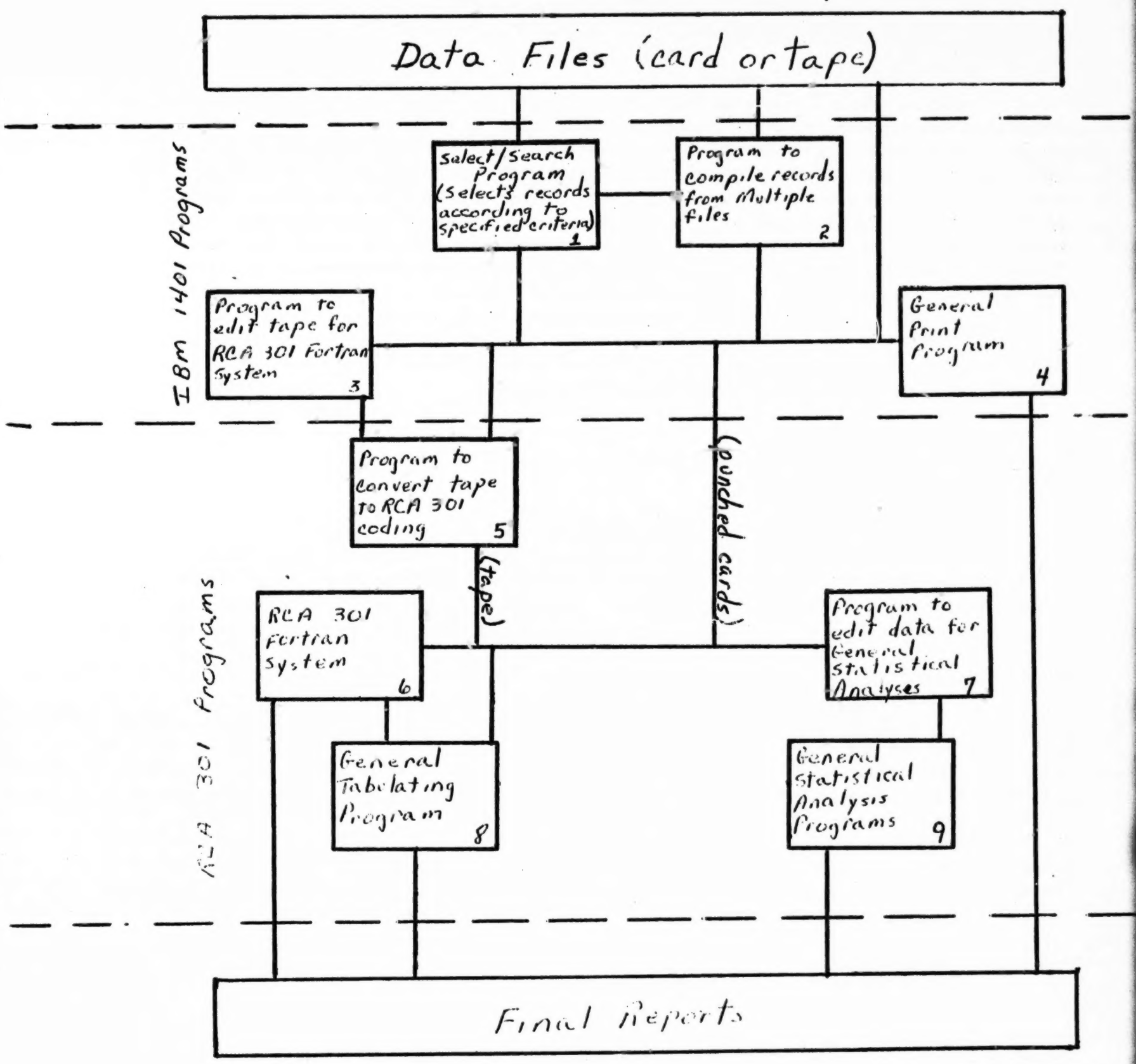
The following is a brief description of each of the programs or functions in the general system with information on its present stage of development.

Select/Search Program

This program will select from any file, designated items from all records on that file which meet certain designated criteria. The criteria for selecting records and the items for selection are specified for each individual run. The criteria on which the selection is to be based must of course be included on the file. (i.e., If all graduate of a given institution holding rank II certificates are to be selected, both the institution of graduation and the rank of certificate must be coded somewhere on each record.) Criteria may be stated in the form of ranges or discrete values. (An example of a range criterion would be "all teachers with birth dates from 1910 to 1923"; examples of discrete criteria would be "teachers in counties 10, 27, and 54"

Figure 5

Flexible System for Data Retrieval and Analysis


Data Files (card or tape)
IBM 1401 Programs
Select/Search Program (selects records according to specified criteria) 1
Program to compile records from multiple files 2
Program to edit tape for RCA 301 Fortran System 3
General Print Program 4
Program to convert tape to RCA 301 coding 5
(tape)
(punched cards)
RCA 301 Programs
RCA 301 Fortran System 6
Program to edit data for General Statistical Analyses 7
General Tabulating Program 8
General Statistical Analysis Programs 9
Final Reports

or "all teachers specified in the following list. . .")

At present, the program for selecting which is available will perform all of the above functions. It is quite inefficient in selecting, though, when a long list of values is specified. Also, it is impractical to select a large volume of information with this program. In addition, it is difficult to use the files built with this select program in building subsequent files or carrying out analyses.

Program to Compile Records from Multiple Files

Often, all of the information needed for a given problem is not contained on a given file. This program selects designated items from records with matching identification codes on two or three different files and combines them into a single file. (i.e., If an analysis of teaching assignments of graduates of a given institution were being conducted, and information on institution of graduation and information on assignment were contained on different files, it would be necessary to match the two files and to build a new file containing both items of information.) All records of teachers in the State Department of Education files contain a teacher identification number. In most cases, this number would be used for matching records. At present, this program is operable with a high degree of flexibility and efficiency. However, minor modifications are being made to increase further this efficiency.

Program to Edit Tape for RCA 301 Fortran System

Tape inputs to the fortran system (described below) must be written in a special format. This program performs the necessary editing to make tapes not in that format acceptable to the fortran system. Is is now fully operable.

General Print Program

This program will prepare a printed list containing selected information from each record on a given file. The specific information to be selected and the form in which it is to be printed is specified for each individual run. Appropriate headings are printed at the beginning of the report and at the beginning of each page. No programs are presently being used in the State Department of Education which will perform this function as described above. There are programs, however, which will print all information in a given file (i.e., a "tape dump") or which will print information in certain specified formats (but only if the input is in a certain specified format).

Program to Convert Tape from IBM 1401 Coding to RCA 301 Coding

The programs for selecting and combining information utilize the IBM 1401 computer. However, the Department programs for analyzing data are written for the RCA 301 computer. Thus, it is necessary to convert tapes to RCA 301 coding before analysis. The conversion program performs this function. It is now fully operable. (If the input to the RCA 301 programs is in the form of cards, no conversion is necessary.)

RCA 301 Fortran System

Fortran is a programming language which is particularly convenient to use when the operations to be performed on the data are mathematical in nature. This system is now available and fully operable in the State Department of Education.

General Tabulating Program.

This program analyzes data and places the results in the form of tables of two or three dimensions. It will accept data in virtually any format from cards or tape. It is now fully operable.

Program to Edit Data for General Statistical Analyses

The statistical analysis programs described below require that the input data be in rigidly specified formats. This program is designed to perform the necessary editing. At present, this program is in the planning stage. The editing for the statistical analysis programs is now done by hand coding, re-formating with offline equipment, or with fortran programs. All of these methods require that input to statistical analysis programs be in the form of punched cards.

Statistical Analysis Programs

These programs perform a number of standard statistical analyses such as means, standard deviations, simple correlations, multiple correlations, regression analyses, equation solutions, analysis of variance, and analysis of convariance. They accept inputs in the form of punched cards, magnetic tape, or paper tape. These programs are fully operable. However, they can be used only when the input data are especially edited. (A program, described above, is now being prepared to provide this editing in an efficient manner.)

Assistance in Using the System

A major goal of Florida M-STEP is to make State Department of Education data available to persons who can put this information to use in advancing education. This includes people both in and out of the State Department of Education. The assistance available consists of consultation regarding retrieval and appropriate usage of information from Department files. Project personnel are available to discuss problems and to prepare the necessary instructions for retrieval and analysis problems. At the present time, no charge is made for consultation or computer time.

ANALYSES OF THE FLORIDA TEACHER EVALUATION DATA

K. Fred Daniel, Director
Florida M-STEP

Florida Statutes[1] require that each certified school employee (teacher, administrator, etc.) be evaluated annually and that this evaluation be placed on file in the State Department of Education. A standard form to be used for the evaluations has been adopted by the State Board of Education. This form is completed in triplicate with one copy for the State Department of Education, one for the county office, and one for the files of the local school. The evaluations are normally completed by principals and countersigned by county superintendents. In the State Department of Education, they become part of teacher personnel files. They are available for inspection only by State Department of Education personnel and by county school personnel on official business.

The evaluation form is designed so that it can be read with and optical scanner. The ratings are thus transferred automatically to punched cards. The punched card data are transferred to magnetic tape for retrieval and analysis via computer. This has made possible the summarizing of ratings for individual schools, for counties, and for the entire state. Statewide summaries of ratings for the years 1963-64 and 1964-65 are presented in Tables 1 and 2.

Analyses Using Earlier Versions of the Form

Data from the Florida Teacher Evaluation Form have been used by a number of Florida State University students in their graduate thesis and dissertation projects. Studies of this type which have been completed to date made use of an earlier version of the evaluation form. This version differs from the present in that it contains more items and employs a scale with five response positions, rather than three. The nature of the items on the new and old forms is the same, however.

Wurzbach[2] studied the relationship between principals' ratings and three status factors: degrees held, teaching experience and county of employment. He found a significant amount of variance in the ratings attributable to differences in collegiate degrees held. His procedures might be questioned, however, as he apparently summed the composite scores for each section of the rating sheet in order to obtain the figures which were used in the analysis. To justify such a practice, it is necessary to make tenable the assumption that all items on the form can be assigned equal weight.

TABLE 1.--Ratings assigned to 45,035 Florida teachers for the 1963-64 school year using the Florida Teacher Evaluation Form

Evaluation Item	Superior		Satisfactory		Poor		Yes		No	
	No.	%	No.	%	No	%	No.	%	No.	%
I. Personal Qualifications										
A. General Health and Emotional Stability	15,704	35	27,897	62	1,277	3				
B. Personal Appearance--Neat & Well-Groomed	18,862	42	25,160	56	858	2				
C. Ability to Think Logically & to Make Practical Decisions	16,432	36	26,570	99	1,852	4				
D. Punctuality	22,649	50	20,580	46	1,648	4				
E. Accuracy	19,762	44	24,169	54	915	2				
F. Ability to Take Necessary & Appropriate Action on His Own	17,822	40	25,329	56	1,694	4				
G. Professional Dedication	22,740	50	21,323	47	796	2				
II. Relationships with Others										
A. Is Respected by Pupils	22,921	51	20,770	46	1,105	2				
B. Is Responsible & Dependable	20,418	45	22,855	51	1,577	4				
C. Is Friendly, Understanding, Sympathetic with Community, Other Staff Members & Administration	22,533	50	20,918	46	1,314	3				
D. Is Morally Upright							44,505	99	301	1
E. Is Professionally Ethical							44,505	99	301	1
III. Teaching Skills & Ability										
A. Knows Subject Matter	19,911	44	24,261	54	339	1				
B. Takes Action to Improve Himself	17,251	38	26,295	58	1,165	3				
C. Uses Instructional Materials & Lesson Plans Effectively	17,922	40	25,408	56	1,270	3				
D. Develops Pupil Interest & Eagerness to Learn	18,927	42	23,814	53	1,839	4				
E. Maintains Pupil Control	18,927	42	23,814	53	1,839	4				
F. Uses Material in Cumulative Folder	10,904	24	31,006	69	1,749	4				
IV. Would You Recommend This Teacher for Re-Employment							42,887	95	1,358	4

TABLE 2.--Ratings assigned to 49,977 Florida teachers for the 1964-65 school year using the Florida Teacher Evaluation Form

Evaluation Item	Number and Percent of Responses									
	Superior		Satisfactory		Poor		Yes		No	
	No.	%	No.	%	No.	%	No.	%	No.	%
I. Personal Qualifications										
A. General Health & Emotional Stability	16,630	33	31,414	63	1,552	3				
B. Personal Appearance--Neat & Well Groomed	22,142	44	26,934	54	640	1				
C. Ability to Think Logically & to Make Practical Decisions	20,095	40	23,193	56	1,361	3				
D. Punctuality	25,944	52	22,361	45	1,395	3				
E. Accuracy	22,873	46	26,112	52	704	1				
F. Ability to Take Necessary & Appropriate Action on His Own	21,236	42	26,974	54	1,446	3				
G. Professional Dedication	25,804	52	23,053	46	841	2				
II. Relationships with Others										
A. Is Respected by Pupils	25,616	51	23,042	46	974	2				
B. Is Responsible & Dependable	28,985	58	19,635	39	1,050	2				
C. Is Friendly, Understanding, Sympathetic with Community, Other Staff Members & Administration	26,142	52	22,493	45	991	2				
D. Is Morally Upright							49,462	99	135	1
E. Is Professionally Ethical							48,605	97	967	2
III. Teaching Skills & Ability										
A. Knows Subject Matter	22,658	45	26,122	52	311	1				
B. Takes Action to Improve Himself	19,320	39	29,180	58	981	2				
C. Uses Instructional Materials & Lesson Plans Effectively	19,384	39	28,807	58	1,040	2				
D. Develops Pupil Interest & Eagerness to Learn	19,787	40	28,229	56	1,256	3				
E. Maintains Pupil Control	22,703	45	24,680	49	1,892	4				
F. Uses Material in Cumulative Folder	12,963	26	34,755	70	1,190	2				
IV. Would You Recommend This Teacher for Re-Employment							47,667	95	1,033	2

Carter[3] used the State Evaluation Form to distinguish between high and low merit-rated junior college teachers. He then studied the relationships between these ratings and personal, educational, and experience factors. He found few significant relationships. He, like Wurzbach, also used composite scores as his measure of teacher competence.

Gerlock[4] compared the ratings given professionally and provisionally certificated first year teachers. He did separate item-by-item analyses and found that those teachers meeting professional certification standards scored significantly higher on some items, particularly those relating to teaching skill.

Four additional studies dealing with factors which might warrant consideration in interpreting data collected with the Florida evaluation form have also been completed. McTeer[5] investigated the hypothesis that teacher-principal likenesses are a factor in teacher rating. He assumed that the more similarities which existed between the teacher and the principal, the higher would be the teacher's rating. Factors which he studied include age, grade point average, highest degree held, and amount of professional work as an undergraduate. He found some significant correlations, but in no case did the likeness factors account for a substantial amount of the variance. Some shortcomings of his study are that he apparently combined scores on scale items and did not account for difference in the general level of scores assigned by different principals.

Packer[6] was interested in the sensitivity of the instrument to "self-others acceptance" which he deemed an essential trait for an effective teacher. He found very little relationship between this construct and the principals' ratings and concluded that either the principals were not sufficiently familiar with the teaching situations or they were not appreciative of "self-others acceptance" as a determinant of effective teaching.

Studies Using the Current Version

Two recent studies by Daniel employed the current version of the Florida Teacher Evaluation Form. The first employed the analysis of variance technique to determine whether certain factors could account statistically for differences in ratings assigned to a teacher on any items on the form.[7] The factors tested were (a) subject or grade being taught (i.e., Is there any difference between ratings assigned to teachers of one grade and those assigned to teachers of another grade?), (b) evaluator (i.e., Is there any difference between the level of ratings assigned by one evaluator and those assigned by others?), (c) certificate rank (i.e., education level), (d) number of different preparations which the teacher must make, (e) sex of the principal, and (f) age of the principal. A summary of significant effects is given on Table 3. It should be recognized that this table summarizes the results of several separate analyses. From the table, it is apparent that, among those effects tested, the only one which contributed significantly to the variance in ratings was the evaluator effect. This can be interpreted two ways: either some principals tend to rate their teachers higher than do other principals, or some principals

TABLE 3.--Comparisons of ratings assigned to the same teachers using the official Florida Teacher Evaluation Form

	Comparison of supervisors' and principals' ratings						Comparison of assistant principals' and principals' ratings					
	Supervisors' ratings higher than principals'		Supervisors' ratings lower than principals'		Supervisors' and principals' ratings same		Assistant principals' ratings higher than principals'		Assistant principals' ratings lower than principals'		Assistant principals' and principals' ratings same	
I. PERSONAL QUALIFICATIONS	N	%	N	%	N	%	N	%	N	%	N	%
A. Is Healthy and Emotionally Stable	49	28	30	17	95	55	62	18	64	18	222	64
B. Is Neat and Well Groomed In Appearance	41	24	26	15	107	61	54	15	70	20	227	65
C. Thinks Logically and Makes Practical Decisions	28	16	27	16	118	68	55	16	82	23	213	61
D. Is Accurate	27	16	32	18	114	66	45	13	76	22	227	65
E. Is Punctual	38	22	40	23	95	55	56	16	74	21	217	63
F. Takes Necessary and Appropriate Action On His Own	28	16	35	20	109	63	45	13	82	24	221	64
G. Is Dedicated to His Profession	27	16	38	23	107	62	58	17	61	18	229	66
II. RELATIONSHIPS WITH OTHERS												
A. Is Respected by Pupils	43	25	28	16	102	59	44	13	70	20	237	68
B. Is Responsible and Dependable	36	21	28	16	109	63	39	11	83	24	228	65
C. Is Friendly, Understanding, Sympathetic . . .	28	16	27	16	118	68	38	11	96	28	215	62

TABLE 3.--Continued

	Comparison of supervisors' and principals' ratings						Comparison of assistant principals' and principals' ratings					
	Supervisors' ratings higher than principals		Supervisors' ratings lower than principals'		Supervisors' and principals' ratings same		Assistant principals' ratings higher than principals'		Assistant principals' ratings lower than principals'		Assistant principals' and principals' ratings same	
	N	%	N	%	N	%	N	%	N	%	N	%
D. Is Morally Upright*	0	0	0	0	171	100	0	0	3	1	344	99
E. Is Professionally Ethical*	1	1	9	5	161	94	4	1	8	2	338	97
III. TEACHING ABILITY												
A. Knows Subject Matter	25	15	31	19	109	66	49	14	55	16	242	69
B. Takes Action To Improve Himself	26	15	47	27	99	58	53	15	66	19	231	66
C. Uses Instructional Materials and Lesson Plans Effectively	31	18	22	13	118	69	57	17	61	18	227	66
D. Develops Pupil Interest and Eagerness to Learn	35	20	26	15	111	65	57	17	73	21	216	63
E. Maintains Pupil Control	37	22	27	16	106	62	60	17	75	21	214	61
F. Uses Material In Cumulative Folder	29	18	20	13	109	69	46	14	64	19	229	68
IV. WOULD YOU RECOMMEND THIS TEACHER FOR RE-EMPLOYMENT?*	1	1	2	1	155	98	2	1	16	5	315	94
TOTAL	530	16	495	15	2213	68	824	12	1179	18	4592	70

*An item with only two possible responses: yes and no.

have better teachers in their schools than do others. A subsequent of studies has been begun to investigate this problem further. The value of such efforts is limited, however, because technical deficiences of the evaluation form place limitations on interpretations which can be made from statistical manipulations of the data therefrom. This problem is discussed later in greater detail.

A second study employing the present form deals with the objectivity of ratings assigned by principals.[8] Objectivity is defined as the extent to which independent ratings of one teacher completed by two different evaluators are in agreement. In this study, ratings by assistant principals and by supervisors were compared with those submitted by principals. These ratings are summarized in Table 4. It was found in both the sample of assistant principals and the sample of supervisors that the principal and the other rater agree about two-thirds of the time. (With the distributions of ratings observed, agreement could usually be expected about half of the time by chance.[9])

Evaluating the Florida Teacher Evaluation Program

Evaluating the Florida teacher evaluation program is difficult, since there is no specific purpose which the program has been designated to fulfill. It might be assumed, however, since the evaluation forms are devised for machine processing and since routines have been established to tabulate and summarize the data, that there has been some intention to secure comprehensive information relating to the quality of teaching in the State. This is information which might be used in developing ways to improve the educational program. Further evidence of such an intention can be found in the proposal for a "multi-state project to improve teacher education"[10] submitted to the U. S. Office of Education in 1965. It was proposed that the Florida State Department of Education use its teacher evaluation data along with other data to determine needed services in the areas of pre-service and in-service teacher education.

When viewed in this framework, the Florida teacher evaluation program displays striking inadequacies. The technical deficiencies in the instrument are one example. The extreme skewing in the distribution of ratings assigned on the form prohibits the utilization of parametric statistical techniques when analyzing the data. Thus, inferences drawn from the data using standard scientific procedures must be interpreted with caution. The lack of homoscedasticity which can result from the skewing often makes it inadvisable to calculate Pearson product-moment coefficients of correlation to provide indicies of the relationship between ratings received and other variables.

The principal handicap which is imposed by a rating scale with a limited number of steps results from restrictions upon amount of information which the scale can provide. The optimum number of scale points is that which makes the maximum use of the observer's discriminative powers.

This point is reached when the ratio between true variance and error variance is maximum. Guilford[11] reviews a number of studies which deal with the optimum number of steps to be used in a rating scale. He concludes that the number is usually greater than seven and may, in certain situations, be as high as twenty-five. The Florida form employs scales with three steps, and in some cases two.

The Florida evaluation form also appears to have some conceptual deficiencies. Particularly notable is the great emphasis placed upon general attitudes or personality traits which are deemed to be conducive to effective teaching and the small amount of emphasis upon behaviors which are actually involved in teaching. The only items on the form which definitely fall into the latter category are "Uses instructional materials and lesson plans effectively," "Develops pupil interest and eagerness to learn," and "Maintains pupil control." These are the only items on the form which can logically be employed as measures for evaluating teaching. The other items are characteristics of teachers which are more appropriately viewed as possible predictors of teaching behavior.

To summarize, it appears that, because of deficiencies of the evaluation instrument, the Florida teacher evaluation program can provide very little information which can be used to improve education in Florida.

REACTIONS TO STUDIES USING DATA COLLECTED WITH THE CURRENT FORM

James C. Impara, Research Consultant

Mr. Daniel has asked me to react to the information provided in the handout which has been distributed.

Recall the pilot studies by Mr. Daniel in which several (96 to be exact) analyses of variance were reported. It is noted that the value of these attempts is limited due to technical deficiencies in the teacher evaluation form. There are two points which I think are important, statistically, with respect to these studies.

1. As was pointed out to the presentation, there are 208 cells which were tested for significance including interactions. If only one test was done per cell and if we assume that the data were appropriate for this type of design, then at least 10 cells could be expected to show significance at the .05 level due to chance alone and at least 2 cells at the .01 level. Since it appears that more than one test was possible for each cell this greatly increases the probability of obtaining significant differences purely by chance.

2. The next point is with respect to the technical deficiencies of the instrument when used in the analysis of variance design. With only 3 choices of ratings: Superior, Satisfactory, or Poor, the distribution obtained is likely to be severly skewed, as is the case with

Mr. Daniel's data. The skewness, by itself, is not a severe problem. The problems are: (1) that little or no variance is even present due to the limited number of ratings; and (2) the scale of ratings is, at best, ordinal which also presents difficulties in the interpretation of results. These same reasons would apply to most parametric and many non parametric tests of significance, thus limiting the use of this form in research on teacher evaluation.

Mr. Daniel's second study was about the "objectivity of ratings". At first glance it would appear that a series of correlations would have been more appropriate than the percent of agreement that is shown in Table 4. On closer inspection of the data, however, these percents are perhaps more appropriate than correlations.

There are basically (but not exclusively) 7 methods of obtaining a coefficient of correlation-(Pearson - Rank Order - Tetra - Contingency - Biserial - Point Bis--ETA). Only two of these might have been appropriate for Mr. Daniel's purposes. These are the Pearson P.M. and the ETA Coef. The basic assumptions of the Pearson is linearity of relationship, and homoscedasticity of scatter. Mr. Daniel's data met neither of these basic assumptions. Due to the evaluation form the continuity of ratings is questionable. The ETA coefficient for nonlinear data is, at best, at tenuous device for determining degrees of relationship. Hence none of the better known correlation techniques were appropriate in determining a measure of objectivity.

Due to these shortcomings in the evaluation instrument it was determined that Mr. Daniel's purposes could be adequately met by using percent of agreement as a measure of objectivity.

Footnotes

1. Statutes of Florida, Section 231.25.

2. Edward G. Wurzbach, "A Three-County Study of Teachers' State Evaluation Scores in Relation to Their Experience and Type of Degree" (unpublished M.S. thesis, Florida State University, Tallahassee, 1962).

3. Fletcher Fairwick Carter, "Selected Aspects of Pre-Service Preparation and Prior Experience of High and Low Merit-Rated Junior College Teachers in Florida" (unpublished Ph.D. dissertation, Florida State University, Tallahassee, 1964).

4. Donald E. Gerlock, "An Analysis of Administrators' Evaluations of Selected Professionally and Provisionally Certificated Secondary School Teachers" (unpublished Ed.D. dissertation, Florida State University, Tallahassee, 1964).

5. John Hugh McTeer, "A Study of the Relationship of Teacher-Principal Likenesses and the Principals' Ratings of Teacher Effectiveness" (unpublished Ed.D. dissertation, Florida State University, Tallahassee, 1963).

6. Morton Alfred Packer, "A Study of the Relationship Between Teachers' Self-Others Acceptance and the Principals' Ratings of These Teachers" (unpublished Ed.D. dissertation, Florida State University, Tallahassee, 1964).

7. K. Fred Daniel, "A Catalog of Analysis of Variance Pilot Studies" (unpublished research report, Multi-State Teacher Education Project, State Department of Education, Tallahassee, Florida, 1966).

8. K. Fred Daniel, "A Study of the Objectivity of the Florida Teacher Evaluation Form" (unpublished research report, Multi-State Teacher Education Project, State Department of Education, Tallahassee, Florida, 1967).

9. Probabilities of agreement between principals' ratings and assistant principals' ratings on a given item were calculated by multiplying the proportion of the sample rated in each category by principals times the proportion rated in the same category by assistant principals. These products were then summed to obtain the probability of agreement on that item.

10. This project has been funded under Title V of Public Law 89-10 (Elementary and Secondary Education Act of 1965) and is now called the Multi-State Teacher Education Project.

11. J. P. Guilford, Psychometric Methods (New York: McGraw-Hill Book Company, Inc., 1954), pp.289-291.

THE MEASUREMENT AND EVALUATION OF TEACHING: A CONCEPTUALIZATION OF A PLAN FOR USE IN STATE EDUCATIONAL LEADERSHIP*

by K. Fred Daniel

An extensive study dealing with the problem of evaluating teaching was recently carried out in the Florida State Department of Education under the Multi-State Teacher Education Project. This study was instituted to delineate the conditions under which statewide programs for measuring and evaluating teaching can yield the most useful information for implementing state educational leadership. The leadership under consideration related particularly to the following state services: education of teachers, certification of teachers, and accreditation of schools.

Two methods were employed to identify possible methods for measuring and evaluating teaching: a synthesis of relevant literature and a questionnaire study. The following section and the later discussion of approaches for evaluating teaching are based upon the synthesis of literature.

The Significance and Ambiguity of Information on Teaching

Several different types of activities are carried out by state governments in their efforts to provide for high quality teaching in elementary and secondary schools. These include (1) developing and administering procedures to insure the quality of programs for the preparation of teachers, (2) developing and administering standards which will allow only qualified people to hold teaching positions, and (3) developing and administering programs for promoting teacher growth and eliminating substandard teaching situations.

The significance of information on teaching for use in state educational leadership derives from the fact that it constitutes the most relevant type of information for evaluating these activities. State educational leadership consists of devising ways to improve these activities. A system for collecting information on the teaching which is taking place

*This report is based upon a more comprehensive document by the same title. The complete report is available from the Division of Teacher Education, Certification and Accreditation, Florida State Department of Education.

in the schools could provide the feedback which is necessary to implement leadership to bring about the improvement of the state programs.

It is noted that virtually no systematic use of such information is presently made by state governments. This could be attributable to the fact that much information on teaching which has been or might be collected is ambiguous. The sources of such ambiguity are numerous. There is no widespread agreement as to what criteria should be used for evaluating teaching. Therefore, confusion may result when two people analyze the same evidence because they are using different criteria. Much research has been conducted to determine the factors which can account for effectiveness or ineffectiveness in teaching. This has generally not been fruitful. A further complicating factor relates to the tenuous relationship between teaching and the subsequent behavior of pupils. The influence of the teacher is only one of the many effects which contribute to pupil learning.

State Programs for Evaluating Teaching in Pennsylvania, Hawaii and Florida

A questionnaire survey conducted indicates that at present there are only three state programs prescribed for evaluating teaching in the United States. These are found in Pennsylvania, Hawaii, and Florida.

The State of Pennsylvania has prescribed a form and procedures for rating teachers. Satisfactory ratings on the form are required in order for a teacher to be eligible for tenure and in order for him to have this certificate renewed. An unsatisfactory rating, along with supporting evidence, provides a legal basis for dismissing a tenure teacher on grounds of incompetence. The Pennsylvania program is not designed to provide information which can be used in making decisions relative to teacher education, certification and accreditation.

The statewide evaluation program in Hawaii has as its states purpose the improvement of teaching in the schools of that State. It is a program similar to one which might be developed in a large school district. The State prescribes a form and procedures; principals observe the teachers and, following the observations, review the ratings in a conference with the teachers. The program for evaluating the work of tenure teachers performs no official regulatory function. However, as in Pennsylvania, satisfactory ratings are required for a probationary teacher to become eligible for tenure. The Hawaii program is not designed to provide information which can be used to evaluate the effectiveness of state educational policies and programs.

In Florida, all teachers are evaluated annually using a form prescribed by the State. The results are place on file in the State Department of Education in a manner which allows them to be summarized and analyzed using electronic data processing equipment. While no official purposes have been specified for this program, it is organized in a manner which should provide the kind of information which could be used to make decisions regarding state policies for improving teaching. However, an examination of data collected indicates various shortcomings which considerably restrict interpretations that can be made using this information.

Approaches to Evaluating Teaching

The process of evaluation is conceived as an operation whereby evidence is compared with criteria. Consequently, the nature of the evidence which is relevant is determined by the criteria. Three types of criteria--product, process, and presage--have been identified. Product criteria comprise the outcomes toward which teaching is directed. Process criteria are those types of teacher behavior believed to be inherently worthwhile, at least in given situations. Presage criteria are made up of those traits or experiences which are thought to be fundamental to certain facets of teaching performance (which can be evaluated employing process criteria) or to achieving certain outcomes (which can be evaluated employing product criteria). Either the product type or the process type can be used in evaluating; presage criteria are, in reality, predictors.

The selection of criteria constitutes a value judgement which may be quite arbitrary. However, a person who is familiar with the situation to which the criteria will apply is normally in a better position to make a judgement as to what constitute acceptable criteria.

The process of collecting evidence and comparing it with criteria can be viewed along three dimensions. They relate to (1) the nature of the situation in which the evidence is collected (varying from "normal" to "constructed"), (2) the agent responsible for collecting the evidence (with the performer himself represented at one extreme and observer at the other), and (3) the point at which the evidence is compared with the criteria (varying from "while observing" to "independently").

There are several techniques for collecting evidence and comparing it with criteria which can be used. These include self reports and self evaluation, rating and rating scales, systematic observation with evaluation performed independently, and testing. There are conditions under which each of these techniques might be applicable in a statewide program for obtaining information to implement educational leadership.

A State Program for Collecting and Analyzing Information on Teaching

The effectiveness of a program for collecting information on teaching to implement state educational leadership depends first upon three conditions which must be met by the information used: relevance, interpretability and reliability. Relevance refers to the relationship between the information collected and the circumstances which state educational leadership is intended to effect. Because this leadership is aimed primarily at helping local school districts to carry out programs which meet the needs of their citizens, it is proposed that the most relevant information can be obtained from carefully designed local evaluation programs. This, however, could lead to problems of interpretability, the second essential condition for an effective program.

Information which is interpretable can be summarized and analyzed in ways which will yield information that can be used for the desired purposes: in this case, for the implementation of state education leadership. Attempting to combine data collected in different places under different circumstances is certain to bring about problems of interpretability. To deal with these, it is proposed that communication be developed between schools using similar criteria, that pilot programs for the development

of exemplary evaluation systems be established and the results widely disseminated, and that a taxonomy of criteria including the core or most basic elements which are included in evaluation programs throughout the state be compiled. The taxonomy could be the starting point for the development and standardization of instruments for measuring various elements of teaching.

Reliability, the third essential condition for an effective program refers to the consistency between the information on teaching which is collected and traits, behaviors, or conditions which that information is assumed to represent. Reliability results when carefully developed instruments and procedures are used.

The information would be collected in a central location and stored in a form which would allow retrieval and analysis using electronic data processing equipment. Six different files are proposed for collecting and storing the information. They would contain (1) information on teacher education program criteria, (2) information on school program criteria, (3) teacher status information, (4) school status information, (5) teaching performance information, and (6) pupil performance information.

The general procedure for analyzing the data involves two phases. The first consists of selecting from the files the data for analysis. The data could come from any one file or any combination of files. The selected data would be incorporated into a new file. The second phase consists of the analysis, itself. This would utilize descriptive or inferential statistical techniques.

Reflections

The study proposes the development of an information system which is capable of providing facts which can be used by the state in strengthening educational leadership. The system is designed to allow the state to make decisions relative to policies for teacher education, teacher certification, and school accreditation on a more rational basis.

Broadening the State Commitment to Institutional Research

The main proposal of the study could also be couched in different terms. A proposal for the development of a system to provide data which makes it possible for administrators to make better decisions is a proposal for institutional research. Institutional research represents a rational, rather than arbitrary, approach to decision-making. It is widely practiced in certain phases of state school administration. On matters relating to educational finance, such as cost of certain programs or tax paying ability in certain areas or of certain segments of the population, institutional research is the rule rather than the exception. Institutional research is also practiced extensively in anticipating needs for new facilities. However, very little use is made of institutional research in developing policies for teacher education, certification, and accreditation.

The primary proposal in this study is that attempts be made to take a rational approach to these matters, as is typically taken in the domains of finance and facilities. Optimum decisions are more likely to result when as much relevant information as possible can be brought to bear.

Codifying the Wisdom of Educational Practitioners

In order to obtain relevant information the study proposes a concerted effort to codify the wisdom of educational practitioners. The results of such a program would have significance far beyond the immediate concerns of providing the state government with information which it can use.

The proposal for codifying the knowledge of practioners resulted from the concept that evaluation must be based upon criteria and the stipulation that neither the teaching processes to be employed nor the teaching products to be sought should be dictated by the state to local school personnel. This means that, if evaluation is to take place, local school personnel must establish the criteria. The establishment of criteria by such personnel would constitute a codification of their professional wisdom.

The resulting statements would set forth the factors which, in the judgement of practicing educators, determine sound educational practice. It would not be a superficial document as might result from a simple survey or Q-sort. Since the statement of criteria would form the official basis for evaluating the work of teachers, it would be reasoned out in a manner which would strike for the essence of the issues. As the criteria were applied, the codification would be continually re-evaluated, revised, and improved. As communication and collaboration between schools increased, the body of knowledge developed by professional practitioners would become more refined.

Lortie[1] declares that a codified body of knowledge representing the best thinking of skilled professional practioners is something which is lacking in the field of education. This is not the case, however, in the profession of medicine, law and architecture. He notes that, while the professional subject matter for the teacher contains contributions from philosophers and psychologists, it does not include a body of knowledge codified by educational practitioners. In medicine, law, and architecture there are such courses, based upon the cumulated wisdom of practitioners.[2]

Lortie also observed that there exists a chasm between schools of education and teachers in the elementary and secondary schools. He asserts that teachers do not attribute the same importance to professional schooling as to physicians, lawyers, and architects.[3] Research results documenting the gap between education professors and teachers are reported by Joyce[4] who found that attitudes toward teaching held by beginning teachers are more in agreement with those held by the general public than with those held by professors of education.

The codifying by practitioners of a body of practical knowledge could contribute to the improvement of teacher education and also to the narrowing of the breach between practitioners and professors. This knowledge would give beginning teachers invaluable support as they commence their professional duties. Excerpts from this body of knowledge would certainly be adopted by schools or departments of education and integrated into their programs. Hopefully, the ultimate result would be the wedding of the best elements from both the professors and the practitioners. One effect of this would be a more prominent place for elementary and secondary classrooms in programs of teacher education.

It is often stated that professional education for teachers should become more closely associated with the classroom. Typical recommendations are that longer student teaching periods be established, that internship programs be developed, that students be assigned case studies or other projects which will bring them into the schools, or that instructors in graduate courses slant their presentations more directly toward the problems of the teachers enrolled.

It is seldom, if ever, suggested that the wisest and most skillful teachers perform the difficult task of codifying their professional wisdom so that it can benefit both them and their associates. Yet, it seems unnecessary that each first-year teacher should have to begin anew to develop such a body of professional wisdom. It also seems unreasonable that a professor of education should have to relate his psychology or philosophy to chance examples when a body of professional information codified by educational practitioners might be available to form a basis for discussion. The codification of the knowledge of practicing educators could serve to bring teacher preparation and teaching closer together. It would provide for an easier induction of the beginning teacher and a basis for communication between teachers and education professors from which they could proceed to work together to improve teaching.

Some Side Effects

There are at least two areas not yet mentioned in which implementation of the above general proposals would contribute to the improvement of teaching. These areas represent functions which are, in fact, more fundamental in improving teaching than are the state services toward which the information system is directed. The first relates to research on teaching; the second to stimulation of local leadership for the improvement of instruction.

In the area of research, the large volume of carefully collected measures and evaluations of teaching would make data available for numerous correlation studies or other investigations employing pre-experimental or quasi-experimental designs. These would include studies probing relationships between various status characteristics of teachers and various types of performance of teachers or between various types of performance of teachers and various teaching products.

It is also expected that implementation of the system would lead to improved understanding and respect by school personnel of the researcher's approach. This would result from continual efforts by teachers and administrators to define their criteria and to employ measures for determining the extent to which they have been met. This is the same basic problem which the research worker encounters repeatedly throughout his career.

The understanding which the school people are expected to develop should make the schools more accessible for use as laboratories for experimental studies. Moreover, it seems likely that their greater sophistication would contribute to better experimental controls and better research results.

Instructional leadership at the local level would also be affected by the greater understanding of research. The search for criteria and for methods of applying them could make school personnel more alert and receptive to research results which might provide assistance or guidance.

However, the greatest stimulus to instructional improvement within the local schools would almost certainly result from the initiative taken by local school personnel to define and redefine the criteria which they wish to employ in evaluating teaching. With definite criteria at hand and definite evidence as to the extent to which the criteria are being met, more decisive measures can be taken to improve teaching.

Conclusion

The study described in this paper was instituted to delineate the conditions under which statewide programs for measuring and evaluating teaching can yield the most useful information for implementing state educational leadership. After reviewing relevant literature and current practices, the study proposes a comprehensive information system designed for yielding information to allow decisions relative to teacher education, teacher certification, and school accreditation to be made on a more rational basis.

Of particular note, however is the fact that the implementation of the system would provide some additional benefits which are, in reality, more significant for improving teaching than state regulations and policies. These include (1) increasing the potential contributions of practitioners to teacher education, (2) stimulating educational research and the application of research finds, and (3) stimulating local leadership for the improvement of instruction.

Footnotes

1. Dan C. Lortie, "Teacher Socialization: The Robinson Crusoe Model," The Real World of the Beginning Teacher (Washington, D. C.: National Commission on Teacher Education and Professional Standards, 1966), pp.54-66.

2. Lortie gives Internal Medicine, Torts, and Principles of Design as examples of this type of course. Ibid., p. 60.

3. Ibid., p. 62.

4. Bruce R. Joyce, "The Social Climate of Teacher Education," Journal of Teacher Education, Vol. 14 (June, 1963), pp. 179-183.

APPENDICES

PROGRAM

Opening Remarks

9:00 a.m.	Welcome	Honorable Floyd T. Christian
	"The M-STEP Idea"	Howard E. Bosley

Ideas Being Implemented by M-STEP in Maryland, Michigan, South Carolina, Utah, Washington, and West Virginia

9:30 a.m.	"Videotapes for Teacher Education"	George W. Hopkins Vere A. McHenry
	"Centers for Student Teaching"	Jerry E. Chapman John B. Himelrick Arthur P. Kulick
	"Coordinating Preservice and Inservice Teacher Education Programs"	William H. Drummond
11:00 a.m.	INTERMISSION	
11:15 a.m.	"Can the M-STEP Ideas be Adapted to Florida's Needs?"	(Small Group Discussions)
11:50 a.m.	Questions for M-STEP Panel Members	
12:30 p.m.	LUNCH	

The Florida M-STEP Program

2:00 p.m.	"Using Information to Improve Educational Leadership"	W. Cecil Golden
	"Information on Teachers and Schools Collected by the State Department of Education"	Simon A. Kinsey Ray V. Pottorf Laymon Gray
	"The State Department of Education Data System"	L. Everett Yarbrough
	"Using the Data We Have"	K. Fred Daniel Wil C. Robinson
	"An Analysis of the Florida Teacher Evaluation Data"	K. Fred Daniel James C. Impara
	"A 'Model' Teacher Evaluation System"	K. Fred Daniel

4:00 p.m. ADJOURNMENT

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THE MULTI-STATE TEACHER EDUCATION PROJECT

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